CLAIMS

1. Automatic description method for an unknown multimedia object in which the unknown object is associated with several types of reference multimedia objects each time depending on a probability of membership to each considered type (G), the method including a step consisting of measuring at least one physical characteristic on the unknown object (F) and comparing it with measurements of characteristics best representing the reference types, the method also including the step (H) consisting of using at least one probabilistic relation for each type giving a probability of membership to the type considered as a function of the result of the comparison of characteristics of the unknown object and the type, the method also including the step consisting of using probabilities of membership to the different types thus obtained in combination with a series of affinity relations between types, so as to elect memberships that are majority in probability and are also co-designated by their affinity relation, so as to exclude memberships with a lower affinity with elected types.

2. Description method according to claim 1, characterized in that it includes the preliminary step consisting of defining the reference characteristics of a type starting from a group of multimedia objects presumed to represent this type (B), by measuring a physical characteristic on this entire group, and by obtaining one or more reference values for this characteristic, this (these) reference value(s) will then be used to define the probability of membership relation to the type as a

value with which a measurement on an unknown object is compared to deduce the probability of membership to the type.

3. Method according to claim 2, characterized in that the group of multimedia objects is provided in an automatic search step in an information system with an Internet downloader and an Internet search engine.

4. Method according to any one of the above claims, characterized in that it includes the preliminary step consisting of taking a set of descriptive objects and measuring a frequency of simultaneous occurrence of types in these objects and thus deducing the existence of an affinity between at least two types when the types have a specific simultaneous occurrence.

5. Description method according to any one of the above claims, characterized in that it includes the step consisting of making a shape recognition on the unknown multimedia object (F), at least one reference shape to be recognized on the unknown object making up a physical characteristic belonging to the definition of one of the types.

6. Method according to claim 5, characterized in that the shape recognition includes a similarity measurement between a shape determined on the object and the reference shape, and also includes the use of a predefined relation giving a probability (G) of membership to the type as a function of the shape similarity measurement made.

7. Method according to any one of the above claims, characterized in that at least one type includes several reference characteristics (E1, E2), and in that at least two measurements are made on the unknown object to make a

proximity measurement with each of the two reference characteristics, and in that the probability of membership to this type is made using at least two relations, each giving a probability of membership to the type as a function of the proximity to a different characteristic, and in that the two probability relations are used to set up a resulting global probability of membership of the object to the considered type.

8. Method according to the above claim, characterized in that the at least two relations for probability of membership to the type are used according to a combinational fuzzy logic technique to provide the resulting probability of membership of the object to the type considered.

9. Method according to any one of the above claims, characterized in that a fuzzy logic technique is used consisting of a mechanism that gives a single probability of membership to a reference type starting from a combination of similarity probabilities with different characteristics to the reference type.

10. Automatic description device for an unknown multimedia object in which the unknown object is associated with several types of reference multimedia objects each time with a probability of membership to the considered type (G), the device including means of measuring at least one physical characteristic on the unknown object (F) and comparing it with measurements best representing the reference types, the device also including means using at least one probabilistic relation for each type giving a probability of membership to the type considered as a function of the result of the comparison of characteristics of the unknown object and

the type, the device also including means of using probabilities of membership to the different types thus obtained in combination with a series of affinity relations between types, so as to elect (H) memberships that are majority in probability and are also co-designated by their affinity relation, so as to exclude memberships with a lower affinity with elected types.

11. Device according to claim 10, characterized in that it includes processing means for making use of several groups of reference multimedia objects (B, C), each group best representing its corresponding type, these processing means also being designed to measure at least one physical characteristic for an entire group considered, and deriving a reference measurement for this characteristic from it, this reference measurement then being used in the definition of the relation giving a probability of membership to the type considered, as a measurement with which the device compares a measurement on an unknown object to deduce the probability of membership to the type considered (G).

12. Device according to either claim 10 or 11, characterized in that it includes means of carrying out a preliminary step consisting of taking a set of descriptive objects and measuring a frequency of occurrence of types in these objects, and then determining if there is an affinity between at least two types when these types have a particular simultaneous occurrence.

PAGE 1/5

Caractéristiques	characteristics
Types	Types

Caractéristique	characteristic
Type	Type
Domaine physique	Physical domain
Pondération	Weighting
Domaine conceptuel	Conceptual domain

2/5

1. Identification manuelle des caractéristiques de référence et des types pertinents	Manually identifying reference characteristics and relevant types
2. Récupération automatique d'objets statistiquement pertinents décrivant un type donné (idem pour tous les types définis)	Automatically retrieving statistically relevant objects describing a given type (same for all defined types)
3. Analyse du contenu des objets de références: Mesure des caractéristiques de référence. Analyse et segmentation des résultats (groupes)	Analyzing content of reference objects measuring reference characteristics. Analyzing and segmenting results (groups)
4. Fuzzification: identification des variables d'entrées (les caractéristiques) et de sorties (les types), des fonctions et limites d'appartenance	Fuzzying: identifying input variables (characteristics) and output variables (types), functions and membership limitations
5. Règles d'inférences (définition)	Inference rules (definition)
6. Mesure des caractéristiques sur objet inconnu	Measuring characteristics on unknown object
7. Defuzzification: évaluation niveau des	Defuzzying: evaluating level of output variables

variables de sortie	
8. Croisement des résultats à l'aide d'un réseau associatif pour limiter l'ambiguité	Cross-checking results by means of an associative network to limit ambiguity

3/5

Niveau de pondération	Weighting level

Appart.	Membership

4/5

Appart.	membership
similitude	similarity

5/5

Appart.	Membership
Prob. d'être une voiture	Probability of being a car